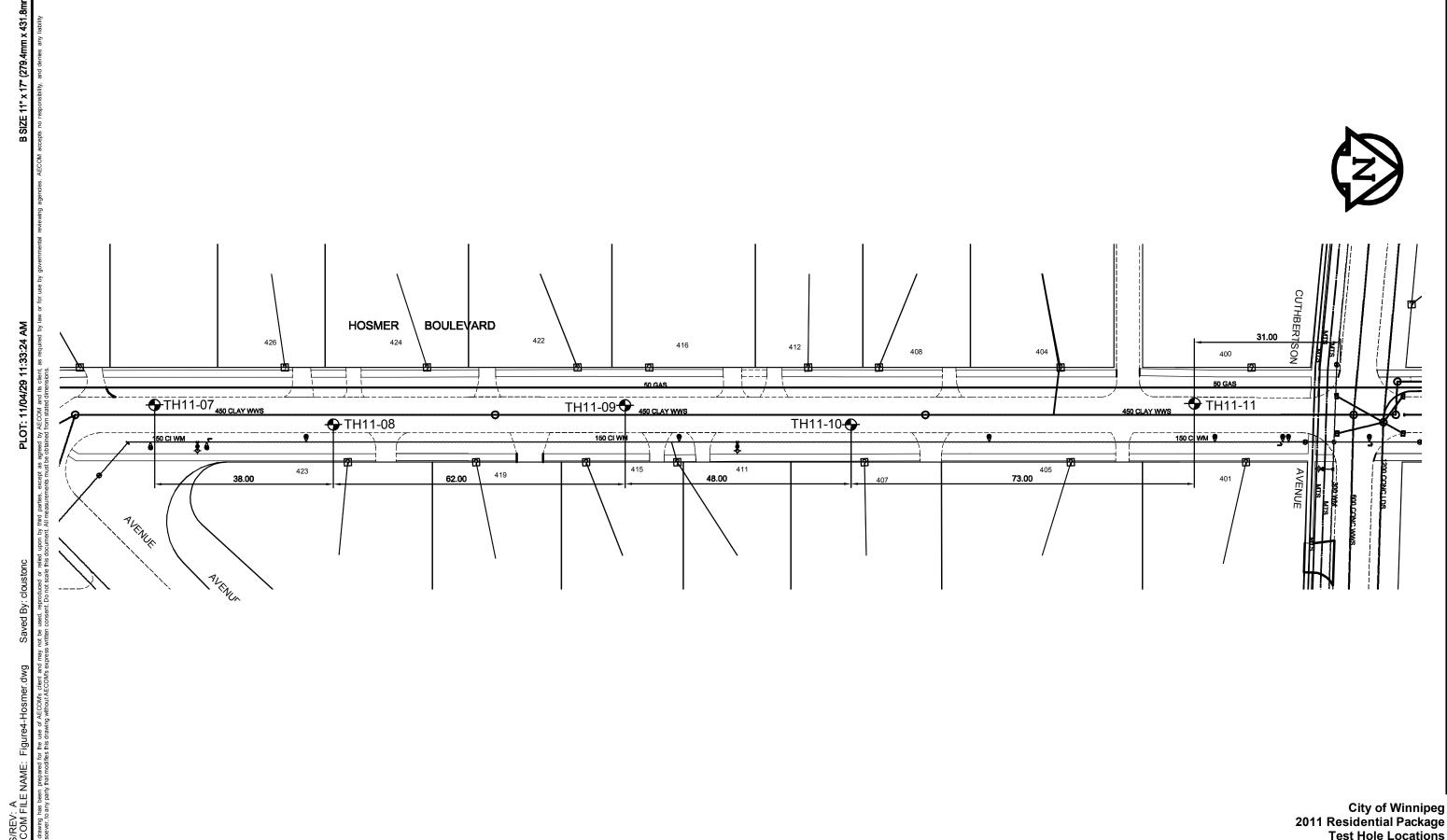
AECOM

APPENDIX A HOSMER BLVD.



City of Winnipeg 2011 Residential Package Test Hole Locations

Hosmer Boulevard Mountbatten Ave to Cuthbertson Ave Figure - 3

AECOM



PUBLIC WORKS DEPARTMENT • SERVICE DES TRAVAUX PUBLICS

Engineering Division • Division de l'ingénierie

GEOTECHNICAL INVESTIGATION

STREET RECONSTRUCTION

Revised October 28th, 2008

Fieldwork

- 1. Clear all underground services at each testhole location.
- 2. Test holes required every 50 m with a minimum of 3 test holes per street.
- 3. Record location of testhole (offset from curb, distance from cross street and house number).
- 4. Drill 150 mm-diameter core in pavement.
- 5. Drill 125 mm-diameter testhole into fill materials and subgrade
- 6. If a service trench backfilled with granular materials is encountered, another hole shall be drilled to define the existing sub-surface conditions.
- 7. Testhole to be drilled to depth of 2 m \pm 150 mm below surface of the pavement.
- 8. Recover pavement core sample and representative samples of soil (fill materials, pavement structure materials and subgrade).
- 9. Measure and record pavement section exposed in the testhole (thickness of concrete or asphalt and different types of pavement structure materials).
- 10. Pavement structure materials to be identified as crushed limestone or granular fill and the maximum aggregate size of the material (20 mm, 50 mm or 150 mm).
- 11. Log soil profile for the subgrade.
- 12. Representative samples of soil must be obtained at the following depths below the bottom of the pavement structure materials 0.1 m, 0.4 m, 0.7 m, 1.0 m, 1.3 m, 1.6 m, etc. Ensure a sample is obtained from each soil type encountered in the testhole.
- 13. Make note of any water seepage into the testhole.
- 14. Backfill testhole with native materials and additional granular fill, if required. Patch pavement surface with hot mix asphalt or high strength durable concrete mix.
- 15. Return core sample from the pavement and soil samples to the laboratory.

Lab Work

- 1. Test all soil samples for moisture content.
- 2. Photograph core samples recovered from the pavement surface.
- 3. Conduct tests for plasticity index and hydrometer analysis on selected soil samples which are between 0.5 m and 1 m below top of pavement (this is the sub-grade on which the pavement and sub-base will be built). The selection will be based upon visual classification and moisture content test results, with a minimum of one sample of each soil type per street to be tested.
- 4. Prepare testhole logs and classify subgrade (based on hydrometer) as follows;

< 30% silt - classify as clay 30% - 50% silt - classify as silty clay 50% - 70% silt - classify as clayey silt

> 70% silt - classify as silt

Prepared by: The National Testing Laboratories Limited and Eng-Tech Consulting

Embrace the Spirit • Vivet l'esprit

, 106 – 1155 Pacific Avenue • 1155, avenue Pacific, bureau 106 • Winnipeg • Manitoba • R3E 3P1

AECOM Canada Ltd.

GENERAL STATEMENT

NORMAL VARIABILITY OF SUBSURFACE CONDITIONS

The scope of the investigation presented herein is limited to an investigation of the subsurface conditions as to suitability for the proposed project. This report has been prepared to aid in the evaluation of the site and to assist the engineer in the design of the facilities. Our description of the project represents our understanding of the significant aspects of the project relevant to the design and construction of earth work, foundations and similar. In the event of any changes in the basic design or location of the structures as outlined in this report or plan, we should be given the opportunity to review the changes and to modify or reaffirm in writing the conclusions and recommendations of this report.

The analysis and recommendations presented in this report are based on the data obtained from the borings and test pit excavations made at the locations indicated on the site plans and from other information discussed herein. This report is based on the assumption that the subsurface conditions everywhere are not significantly different from those disclosed by the borings and excavations. However, variations in soil conditions may exist between the excavations and, also, general groundwater levels and conditions may fluctuate from time to time. The nature and extent of the variations may not become evident until construction. If subsurface conditions differ from those encountered in the exploratory borings and excavations, are observed or encountered during construction, or appear to be present beneath or beyond excavations, we should be advised at once so that we can observe and review these conditions and reconsider our recommendations where necessary.

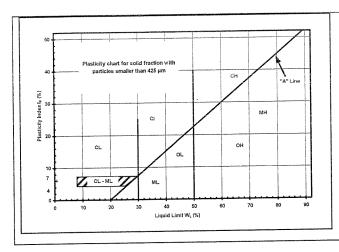
Since it is possible for conditions to vary from those assumed in the analysis and upon which our conclusions and recommendations are based, a contingency fund should be included in the construction budget to allow for the possibility of variations which may result in modification of the design and construction procedures.

In order to observe compliance with the design concepts, specifications or recommendations and to allow design changes in the event that subsurface conditions differ from those anticipated, we recommend that all construction operations dealing with earth work and the foundations be observed by an experienced soils engineer. We can be retained to provide these services for you during construction. In addition, we can be retained to review the plans and specifications that have been prepared to check for substantial conformance with the conclusions and recommendations contained in our report.

EXPLANATION OF FIELD & LABORATORY TEST DATA

					UMA	uscs		Laboratory	Classification Crite	ria
		Description	on	The state of the s	Log Symbols	Classification	Fines (%)	Grading	Plasticity	Notes
		CLEAN GRAVELS	Well graded sandy gravels, or no fin	with little	2727	GW	0-5	C _U > 4 1 < C _C < 3		
	GRAVELS (More than 50% of	(Little or no fines)	Poorly graded sandy gravels, or no fir	with little		GP	0-5	Not satisfying GW requirements		Dual symbols if 5
12	coarse fraction of gravel size)	DIRTY GRAVELS	Silty gravels, s gravel		M	GM	> 12		Atterberg limits below "A" line or W _P <4	Dual symbols if above "A" line an
INED OU	,	(With some fines)	Clayey gravel sandy gra			GC	> 12		Atterberg limits above "A" line or W _P <7	4 <w<sub>P<7</w<sub>
COARSE GRAINED SUILS		CLEAN SANDS	Well graded gravelly sands or no fir	, with little		sw	0-5	C _U > 6 1 < C _C < 3		$C_U = \frac{D_{60}}{D_{10}}$ $C_C = \frac{(D_{30})^2}{D_{10} x D_{60}}$
COA	SANDS (More than 50% of	(Little or no fines)	gravelly sands	raded sands, ands, with little no fines		SP	0-5	Not satisfying SW requirements		$C_C = \frac{(D_{30})^2}{D_{10} x D_0}$
	coarse fraction of sand size)	DIRTY SANDS	Silty sar sand-silt m			SM	> 12		Atterberg limits below "A" line or W _P <4	
		(With some fines)	Clayey sands, sand-clay mixtures			SC	> 12		Atterberg limits above "A" line or W _P <7	
	SILTS (Below 'A' line	W _L <50	Inorganic silt clayey fine sa slight pla	ands, with		ML				
	negligible organic content)	W _L >50	Inorganic silt plastic		Ш	МН				·
SOILS	CLAYS	W _L <30	low plasticity, lean clays Inorganic clays and silty			CL				
FINE GRAINED SOILS	(Above 'A' line negligible organic	30 <w<sub>L<50</w<sub>				CI			Classification is Based upon Plasticity Chart	
FINE	content)	W _L >50	Inorganic cla plasticity, f			СН				
	ORGANIC SILTS & CLAYS	W _{i.} <50	Organic si organic silty c plastic	lays of low	The state of the s	OL				
	(Below 'A'	W _L >50	Organic clay plastic			ОН				
1	HIGHLY ORGA	AINIC SOILS	Peat and oth organic			Pt	I .	Von Post sification Limit		or odour, and often us texture
		Asphalt	AA		Till				The second secon	
	4. *	Concrete			Bedrock lifferentiated)			AE	COM
2		Fill		(L	Bedrock imestone)				signated fracti	

When the above classification terms are used in this report or test hole logs, the designated fractions may be visually estimated and not measured.



FRAC	CTION	SEIVE S	SIZE (mm)	DEFINING RANGES OF PERCENTAGE BY WEIGH OF MINOR COMPONENT								
		Passing	Retained	Percent	Identifier							
_	Coarse	76	19	35-50	and							
Gravel	Fine	19	4.75	33 30								
	Coarse	4.75	2.00	20-35	"v" or "ev" *							
Sand	Medium	2.00	0.425	20 00	1, 41 4)							
	Fine	0.425	0.075	10-20	some							
	n-plastic) (plastic)	< 0.0)75 mm	1-10	trace							

* for example: gravelly, sandy clayey, silty

Definition of Oversize Material

COBBLES: 76mm to 300mm diameter BOULDERS: >300mm diameter

LEGEND OF SYMBOLS

Laboratory and field tests are identified as follows:

qu - undrained shear strength (kPa) derived from unconfined compression testing.

 T_{ν} - undrained shear strength (kPa) measured using a torvane

pp - undrained shear strength (kPa) measured using a pocket penetrometer.

 $L_{\rm v}$ - undrained shear strength (kPa) measured using a lab vane.

F_v - undrained shear strength (kPa) measured using a field vane.

 γ - bulk unit weight (kN/m³).

SPT - Standard Penetration Test. Recorded as number of blows (N) from a 63.5 kg hammer dropped 0.76 m (free fall) which is required to drive a 51 mm O.D. Raymond type sampler 0.30 m into the soil.

DPPT - Drive Point Pentrometer Test. Recorded as number of blows from a 63.5 kg hammer dropped 0.76 m (free fall) which is required to drive a 50 mm drive point 0.30 m into the soil.

w - moisture content (W_L, W_P)

The undrained shear strength (Su) of a cohesive soil can be related to its consistency as follows:

Su (kPa)	CONSISTENCY
<12	very soft
12 – 25	soft
25 – 50	medium or firm
50 – 100	stiff
100 – 200	very stiff
200	hard

The resistance (N) of a non-cohesive soil can be related to compactness condition as follows

N - BLOWS/0.30 m	COMPACTNESS
0 - 4	very loose
4 - 10	loose
10 - 30	compact
30 - 50	dense
50	very dense

			LIENT:												NO: TH11-07			
		Hosmer Blvd, Southbound Lane, 252m South of Cuthb	ertson	Ave.	., 2	.2 m	Eas	t of c	urb.		<u> </u>		PROJECT NO.: 60212233 ELEVATION (m):					
		101111010111111111111111111111111111111	ETHO					with ⊟B		mm	Corin		<u> </u>	COVER				
DEPTH (m)	SOIL SYMBOL	PE GRAB SHELBY TUBE SOIL DESCRIPTION	SPL	SAMPLE LYPE	SAIVIPLE #	F SP 2	ENETR * I O Dyna T (Star (Blov 0 4) Tota (7 18	ATION Becker amic C ndard vs/300 0 6 al Unit kN/m ³	TEST Cone C Pen Temm) Wt Utility Liqu	est) • 0 100 0 21		INED SH + Tor X C □ Lab △ Pocke ♣ Field (k	EAR ST vane + QU X Vane □ et Pen. 4 Vane €	RENGTH	COMMENTS	DEPTH		
0		ASPHALT (thickness = 110 mm)		+	-	2	0 4	0 6	0 8	0 100		50 <u>1</u>	00 1	50 200 :				
-		GRANULAR BASE (<19 mm) - brown - well graded - moist SILT - sandy - light brown - frozen, moist when thawed - low plasticity		G	43		•											
1		- some clay below 0.9 m CLAY - brown - frozen to 1.7 m, moist when thawed - high plasticity		G	45		•									1		
- - - - - -2		- below 1.7 m, firm		G	346 347 348											2		
ACADIA BAY LOGS. GPJ UMA WINN. GDJ 47.29/17		END OF TEST HOLE AT 2.1 m in clay. NOTES: 1. No sloughing observed. 2. No seepage observed. 3. Test hole backfilled with auger cuttings, sand and asphalt cold pa to surface. 2. Drilled with 150 mm diamond core to 0.11 m, solid stem augers to m.														3		
LOG OF TEST HOLE HUGO SIREET, HOSMER BLVD, ACADIA BAY LOGS, GPJ UMA WINN, CDJ													<u>.</u>	COMPI	ETION DEPTH: 2.10 m	The state of the s		
- LO 00		A ECOM				RE	VIEW	ED B	Y: F	aris k	Petscl halil Faris				ETION DATE: 4/18/11	1 of		

		2011 Residential Street Renewal CLIENT												E NO: TH11-08	
		Hosmer Blvd, Northbound Lane, 214m South of Cuthbertson	ı Aı	/e., 2	.0 m	West	of c	urb.						NO.: 60212233	
CON	TRAC	TOR: Paddock Drilling Ltd. METHO							mm	Corin		L		DN (m):	
SAMP	LE TY	PE GRAB SHELBY TUBE SI	PLIT	SPO			∃BU						ECOVE		
DEPTH (m)	SOIL SYMBOL	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE #	0 ◆ SP1 0 20 1 16 17	₩ B Dyna (Stan (Blow 40 Tota (I	rs/300n 60 al Unit \ (N/m³)	one ♦ en Termm) 80 Wt 20	st) 💠) 100 21	ž	+ Ton X C □ Lab Δ Pocke ♣ Field (k	vane + QU X Vane E et Pen. I Vane (Pa)) Δ	COMMENTS	DEPTH
0		ASPHALT (thickness = 125 mm)			- 4	:	:	;	-100			<u>;</u>	:		
ŀ	11	CONCRETE (thickness = 95 mm)				• • • • •	• • • • • •					<u>.</u>	.i		
-		CLAY - dark brown - soft, moist - high plasticity		G49		•									
1		SILT - some sand, some clay - light brown - frozen, moist when thawed - low plasticity		G50		•									
- - -1				G51	1	•						; ; ;	<u></u>	Gradation : Sand = 19.2%, Silt = 69.7%, Clay = 11.1%	1
-				G52		•							:		
-		CLAY - brown - frozen to 2.0 m, moist, firm when thawed - high plasticity		G53		•									
-				G54		•					· · · · · · · · · · · · · · · · · · ·				
-2		END OF TEST HOLE AT 2.1 m in clay.		G55			•								2
200 OF 1EST TOLE 10050 STREET, TOSMEN BLVD, TOLED BVT 10050 STREET, TOLED BVT		NOTES: 1. No sloughing observed. 2. No seepage observed. 3. Test hole backfilled with auger cuttings, sand and asphalt cold patch to surface.						, , , ,						•	
		Drilled with 150 mm diamond core to 0.22 m, solid stem augers to 2.1 m.													
3															
Cosmen bevo			describing states by a property commence of the order								.;				
			THE THE PERSON NAMED AND PARTY OF THE PERSON NAMED AND PARTY.												
4						<u>:</u>	•	<u>.</u>	<u></u>		. <u>.</u>				
		AECOM			RE\	/IEW	ED B	Y: Fa	aris K	Petscl (halil Faris				LETION DEPTH: 2.10 m LETION DATE: 4/18/11 Page	

PROJECT	: 2011 Residential Street Renewal CLIEN											E NO: TH11-09	
	N: Hosmer Blvd, Southbound Lane, 152 m South of Cuthberts	son A	۹ve.,	2.3 m	East	of cu	rb.					NO.: 60212233	
	CTOR: Paddock Drilling Ltd. METH					vith 1: ∃BULI		Corin			COVER	N (m): RY TORE	
DEPTH (m) SOIL SYMBOL	YPE GRAB ((()) SHELBY TUBE (()) SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE #	PF	NETRA ** Be Dynan (Stand (Blows) 40 Total (kl 18	TION TE cker * nic Cone ard Peri /300mm 60 Unit Wt V/m³)	STS	G .	iNED SH + Ton X C □ Lab △ Pocke ♣ Field (ki	EAR STF vane + QU X Vane D et Pen. 2 Vane •	RENGTH	COMMENTS	ОЕРТН
0	ASPHALT (thickness = 170 mm) CONCRETE (thickness = 120 mm) SILT - light brown - frozen, moist when thawed												
- - -	- low plasticity CLAY - some silt, trace sand, trace gypsum - brown		G56 G57)		1					Gradation: Sand = 4.6%, Silt =	
-1 1 	- frozen, moist when thawed - high plasticity SILT - some clay - light brown - frozen, moist when thawed		G58		•							23.7%, Clay = 71.7%	1-
- - - -	- low plasticity SILTY CLAY - brown - frozen, moist when thawed - intermediate plasticity		G59		•								
-2	CLAY - brown - frozen to 2.0 m, moist, firm below - high plasticity END OF TEST HOLE AT 2.1 m in clay. NOTES:		G61		•								2
3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	No sloughing observed. No seepage observed. Test hole backfilled with auger cuttings, sand and asphalt cold patch to surface. Drilled with 150 mm diamond core to 0.29 m, solid stem augers to 2.1 m.												
3													3
		THE THE PROPERTY OF THE PROPER											
4	AECOM			RE	VIEWE	D BY:	Faris	n Petsc Khalil : Faris		(LETION DEPTH: 2.10 m LETION DATE: 4/18/11 Page	1 of

PROJ	ECT:	2011 Residential Street Renewal	CLIENT: City of Winnipeg										TESTHOLE NO: TH11-10					
LOCA	TION	: Hosmer Blvd, Northbound Lane, 104 m South of Cu	Outhbertson Ave., 1.7 m West of curb. METHOD: 125 mm SSA with 150 mm Coring												NO.: 60212233			
		TOR: Paddock Drilling Ltd.	METHO	D:	125	mm	<u>SSA</u>	with	150	mm	Corin		ELEVATION (m): NO RECOVERY CORE					
SAMPI	LET	PE GRAB SHELBY TUBE	⊠ SF	PLIT	SPO	NC		BI	JLK			<u> </u>			RY TCORE			
DEPTH (m)	SOIL SYMBOL	SOIL DESCRIPTION		SAMPLE TYPE	SAMPLE#	◆ SP 0 2 16 17	X E Dyna T (Star (Blov 0 4 ■ Tot (7 18 lastic	Becker amic C ndard F vs/300 0 60 al Unit kN/m ³) 3 19 MC	one	st) 🗣		+ Ton X Q Lab ' Lab ' Pocke Field		Δ	COMMENTS	DEPTH		
						2	0 4	0 6	80	100	5	0 1	00 1	50 200				
0		ASPHALT (thickness = 115 mm)							:				:					
	44	CONCRETE (thickness = 135 mm)											:					
		SITLY CLAY - some sand																
		 dark brown frozen, moist when thawed 											: : :	<u>.</u>				
		- high plasticity											:	:	Gradation:			
					G62			1				· } · · · · · · · :	<u></u>	. <u>;</u>	Sand = 20.2%, Silt = 34.1%, Clay = 45.7%			
						l	: : :					; ;	: ;	. <u>;</u>	,			
		CLAY - trace organics			000							:	:	:				
		 dark brown frozen, moist when thawed 			G63		.	 :					 !	:				
		- high plasticity					: :	: :					<u>:</u> :	<u>.</u>				
		SILTY CLAY - brown - frozen, moist when thawed			G64			:						:				
		- high plasticity			G04		 :	: :				:	. .					
							<u>.</u>					:	. <u>:</u>	<u>.</u>				
	1111	SILT - light brown			G65			:				:	:	:				
		- frozen to 1.8 m, moist when thawed - low plasticity			G05		. •								1			
							<u>.</u>	<u> </u>	·	: ! • • • • •	 	; ;	. <u>;</u>					
					G66		:	:	:	:			:	:				
		- below 1.8 m, soft			300		. y. :		: :			} !	·?·····	÷·····				
							<u>.</u>		: :	: :		<u></u>	.j					
2		- some clay below 2.0 m			G67		:		:	:		:	:	:				
		END OF TEST HOLE AT 2.1 m in silt.			1		. 				1	:		:				
		NOTES: 1. No sloughing observed.				ļ	<u>.</u>	<u></u>	<u>:</u> :	: :	ļ	į	.;	 :				
		No seepage observed. Test hole backfilled with auger cuttings, sand and asphalt column.	ld natch				:	:					:	<u>.</u>				
		to surface					:	:	:	:			:					
		2. Drilled with 150 mm diamond core to 0.25 m, solid stem augr m.	ers to 2.1				<u>:</u>	<u>:</u>	<u>:</u>	<u></u>								
									<u>:</u>				.;					
								:	:			:						
						 	÷		<u>.</u>	····	1		·	· <u>.</u>				
3						 			<u>:</u> 	<u></u>		.;	.;					
							:					:	:	:				
							<u></u>					.; :	· · · · · ·					
							<u>.</u>	. .		į			. <u>.</u>					
							:	:	:				:	:				
	-					1	÷	· : · · · ·	:	:	1			:	•			
	-					ļ	<u>.</u>		<u>:</u>	<u>:</u>		. !		. <u>:</u>				
								:	:	:		:	:	:				
						,	. 				1		· · · · · · · · · · · · · · · · · · ·	:	.			
								. <u>;</u>	<u>.</u>	<u>;</u>				. <u>.</u>				
4											Petscl	he			PLETION DEPTH: 2.10 m			
		A=COM							3Y: F		(halil Faris			COMP	PLETION DATE: 4/18/11 Page			

PROJ	ECT:	2011 Residential Street Renewal	CLIENT										TESTHOLE NO: TH11-11					
LOCA	TION:	Hosmer Blvd, Southbound Lane, 31 m South of C	Cuthbertsor	١A٧	e., 2	.0 m	Εo	f curb.	450		<u> </u>		PROJECT NO.: 60212233 ELEVATION (m):					
		OR: Paddock Drilling Ltd.	METHO	DD:	125	mm	SS	A with	150	mm	Corin							
SAMPL	E TY	PE GRAB SHELBY TUBE	⊠s	PLIT	SPO			BI						COVERY				
DEPTH (m)	SOIL SYMBOL	SOIL DESCRIPTION		SAMPLE TYPE	SAMPLE #	◆ SF 0 2 16 1	→ Dy T (Si (Bl O T T		₩ one ◇ Pen Te mm) 0 8 Wt •)	st) + 0 100 0 21		+ Torv X Qi ☐ Lab \ ∆ Pocke ♣ Field (kF	ane + U X /ane □ t Pen. ∠ Vane ❤ Pa)	2	COMMENTS	DEPTH		
0		ASPHALT (thickness = 140 mm)					20	40 6	0 8	0 100	5	0 10	10 1	50 200				
-	800 - 10 -	CONCRETE (thickness = 100 mm)					<u>.</u> 						· · · · · · ·	<u>:</u>				
-	-	CLAY - trace sand, trace silt										, , .						
-		- dark brown																
-		 frozen to 1.7 m, moist when thawed high plasticity 					<u>:</u> :	į					· • · · · · · ·					
-					G68		. (•	<u>.</u>				: ;	.;				
				Γ						:			:		:			
-						····	.i		 :			· · · · · · ·	; :	-				
					G69	 	•). 	<u>.</u> 	; ;	ļ	; ;	; ;					
4							:	:	:	:		:	:			1		
- 1							# !		: :	: :		:						
					G70	 		D	<u>:</u> 	<u></u>		<u>.</u>	<u>:</u>					
		- trace gypsum at 1.2 m					:		:	:		:	:					
							÷					:						
					G71		<u>.</u> (•	<u>.</u>	<u>.</u>			<u>.</u>					
							:	:	:	:		:						
		- below 1.7 m, firm								!			·	:				
		book in in in			G72			•	<u>.</u>				. .					
							:	:	:	:		:	:	:				
-2							·			· ! · · · · · !								
-					G73	3	.		<u>.</u>			. .						
		END OF TEST HOLE AT 2.1 m in clay. NOTES:					:	:	-	:		:	:					
-3		No sloughing observed.							:		1			;				
		No seepage observed. Test hole backfilled with auger cuttings, sand and asphalt	cold patch						<u>:</u>	· [÷					
		to surface. 2. Drilled with 150 mm diamond core to 0.24 m, solid stem a	augers to 2.1						:		ļ	.i	<u>:</u>					
		m.						:				:	:					
									· ! · · ·									
												. <u>.</u>	<u>.</u>	;				
							:	•		:			:					
-3													·}····					
	and and a second						. : . :											
							:	:	:	:								
•							. : .	••••										
•							. <u>;</u>			-		
_							:	:	-	:		:	:					
_				-			:		:		1	:	:					
_							. .						.	· . 		1		
-							:	:	:	:		:						
4						111)) (GED BY	/: St	epher	Petso	he	1	COMPL	ETION DEPTH: 2.10 m	<u></u>		
		AECOM				R	EVII	EWED	BY:	Faris	Khalil				ETION DATE: 4/18/11			
4		ACUM				P	RO.	JECT E	NGIN	IEER	: Faris	Khalil			Pag	e 1 c		



Photograph 1. Hosmer Blvd. - TH11-07



Photograph 2. Hosmer Blvd. – TH11-08



Photograph 3. Hosmer Blvd. - TH11-09



Photograph 4. Hosmer Blvd. – TH11-10



Photograph 5. Hosmer Blvd. – TH11-11



City of Winnipeg 2011 Residential Street Renewal – Hosmer, Hugo and Acadia Geotechnical Investigation

Test		Pavement S	Surface	Pavement Structu	re Material	Subgrade	Sample	Moisture		Hydromet	er Analysis		At	terberg Lir	nits
Hole No.	Testhole Location	Туре	Thickness (mm)	Туре	Thickness (mm)	Description	Depth (m)	Content (%)	Gravel (%)	Sand (%)	Silt (%)	Clay (%)	Plastic Limit	Liquid Limit	Plasticity Index
						Sandy Silt	0.6	28.4			·				
	No. of State Control					Sandy Silt	0.9	23.9							
TH11-07	Hosmer Blvd., Southbound Lane, 252 m S of Cuthbertson	Asphalt	110	Granular Base	200	Clay	1.2	26.2							
1411-01	Ave., 2.2 m E of Curb	Aspilait	110	(<19 mm)	200	Clay	1.5	33.6							
	Ave., 2.2 III E of Curb					Clay	1.8	38.9							
						Clay	2.1	44.4							
						Clay	0.3	32.8							
		Asphalt	125			Silt	0.6	36.8							
	Hosmer Blvd., Northbound	Aspilait	123			Silt	0.9	26.5	0.0	19.2	69.7	11.1	22.8	15.6	7.2
TH11-08	Lane, 214 m S of Cuthbertson			None	n/a	Silt	1.2	22.5							
	Ave., 2.0 m W of Curb					Clay	1.5	29.2							
		Concrete	95			Clay	1.8	35.3	,						
						Clay	2.1	42.6							
						Silt	0.6	21.1							
	Hosmer Blvd., Southbound	Asphalt	170			Clay	0.9	33.4	0.0	4.6	23.7	71.7	71.3	26.2	45.1
TH11-09	Lane, 152 m S of Cuthbertson			None	n/a	Silt	1.2	25.8							
11111 03	Ave., 2.3 m E of Curb				.,, =	Silty Clay	1.5	23.3							
		Concrete	120			Silty Clay	1.8	34.6							
						Clay	2.1	41.7					=	400	+
						Silty Clay	0.6	28.6	0.0	20.2	34.1	45.7	50.8	19.8	31.0
	Hosmer Blvd., Northbound	Asphalt	115			Clay	0.9	26.8							
TH11-10	Lane, 104 m S of Cuthbertson			None	n/a	Silty Clay	1.2	25.7							
	Ave., 1.7 m W of Curb					Silt	1.5	27.2							
	Í	Concrete	135			Silt	1.8	22.3						 	
						Silt	2.1	23.8							
						Clay	0.6	35.3							
	Hosmer Blvd., Southbound	Asphalt	140			Clay	0.9	29.3							
TH11-11	Lane, 31 m S of Cuthbertson	***************************************		None	n/a	Clay	1.2	32.0							
	Ave., 2.0 m E of Curb					Clay	1.5	33.4							
		Concrete	100			Clay	1.8	40.6							
						Clay	2.1	46.9							